

We Claim:

1. A system for applying ultrasound energy to a body region comprising

an ultrasound applicator including a housing, an ultrasound transducer carried by the housing, and a chamber sized to hold an acoustic coupling media subject to a pressure in acoustic communication with the ultrasound transducer,

an acoustic coupling media handling module communicating with the chamber to selectively vary the pressure within the chamber,

an electrical signal generating machine adapted to be coupled to the ultrasound transducer, and

a controller coupled to the electrical signal generating machine to generate electrical signals to operate the ultrasound transducer to output acoustic energy at a selected intensity level, the controller including a function to sense at least one system parameter and compare the sensed system parameter to a desired level, the controller also being coupled to the acoustic coupling media handling module to command variations in the pressure in the chamber based, at least in part, upon the comparison.

2. A system according to claim 1 wherein the system parameter includes impedance.

3. A system according to claim 2 wherein the controller commands variation in the pressure in the chamber based, at least in part, upon variance between the sensed impedance and a desired impedance level.

4. A system according to claim 1 wherein the controller includes a function that selects the desired level based upon the selected intensity level.

5. A system according to claim 1 wherein the controller commands variation in the

